

# PTS0603

## SMD PTC fuses



### Product features

- Positive temperature coefficient (PTC)
- Surface mount resettable fuse
- Low resistance
- Compact 0603 (1608 metric) footprint
- Voltage rating 6 V to 15 V
- Current rating from 0.04 A to 0.35 A
- Fast time-to-trip

### Applications

- Data ports
- Micromotors and fans
- Low voltage test and measurement
- Low voltage hand held equipment
- PC-based medical equipment
- USB protection
- Secondary Li-ion battery protection
- Game consoles, set top boxes
- Battery charging & charging connections

### Agency information

- cURus Recognized file no. E343021
- TUV: File R 50506608



### Environmental compliance



### Part number system/ordering:

#### PTS060315V004

- PT= PTC resettable fuse
- S= Surface mount
- 0603= Dimension code
- 15V= Maximum voltage
- 004= Ihold current rating (004= 0.04 A)

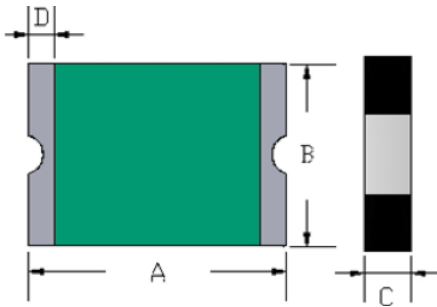
**Product specifications**

Part number	Vmax <sup>1</sup>	I <sub>max</sub> <sup>2</sup>	I <sub>hold</sub> <sup>3</sup>	I <sub>trip</sub> <sup>4</sup>	Pd <sup>5</sup>	Time-to-trip (maximum)		Resistance <sup>6</sup>		Safety approvals	
	(V <sub>dc</sub> )	(A)	(A)	(A)	typical (W)	(A)	(seconds)	Initial (R <sub>i</sub> ) minimum (Ω)	Post trip (R <sub>1</sub> ) maximum (Ω)	cURus	TUV
PTS060315V004	15	1	0.04	0.12	0.5	0.2	1.0	1.5	40	√	√
PTS060315V005	15	1	0.05	0.15	0.5	0.25	1.0	1.0	40	√	√
PTS060315V010	15	3	0.10	0.25	0.5	0.5	1.0	0.5	6	√	√
PTS06039V016	9	4	0.16	0.40	0.5	1.0	1.0	0.4	5	√	√
PTS06039V020	9	4	0.20	0.50	0.5	1.0	0.6	0.3	4	√	√
PTS06036V035	6	8	0.35	0.75	0.5	8.0	0.1	0.09	1.5	√	√

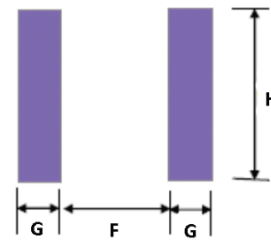
- V<sub>max</sub>: Maximum continuous voltage the device can withstand without damage at rated current
- I<sub>max</sub>: Maximum fault current the device can withstand without damage at rated voltage
- I<sub>hold</sub>: Maximum current the device will pass without interruption at +23 °C still air
- I<sub>trip</sub>: Minimum current that will transition the device from low resistance to high resistance at +23 °C still air
- Pd: Power dissipated from the device when in tripped state at +23 °C still air

- R<sub>i</sub>: Minimum resistance of the device at +23 °C  
R<sub>1</sub>: Maximum resistance of the device one hour after tripping at +23 °C

**Dimensions—mm**



**Recommended pad layout**



No marking

Part number	A typ	A max	B typ	B max	C typ	C max	D min	F	G	H
PTS060315V004	1.65	1.80	0.80	1.00	0.56	0.80	0.15	0.8	0.6	0.8
PTS060315V005	1.65	1.80	0.80	1.00	0.56	0.80	0.15	0.8	0.6	0.8
PTS060315V010	1.65	1.80	0.80	1.00	0.53	0.80	0.15	0.8	0.6	0.8
PTS06039V016	1.65	1.80	0.80	1.00	0.50	0.80	0.15	0.8	0.6	0.8
PTS06039V020	1.65	1.80	0.90	1.00	0.45	0.80	0.15	0.8	0.6	0.8
PTS06036V035	1.65	1.80	0.90	1.00	0.70	0.80	0.15	0.8	0.6	0.8

**General specifications**

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Operating temperature: -40 °C to + 85 °C (with derating)

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Storage temperature: -10 °C to + 40 °C

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Storage relative humidity: ≤70%

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Storage condition: Keep away from corrosive atmosphere and sunlight

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Passive aging: IEC60738-1, +85 °C, 1000 hours, ≤20%

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Humidity aging: +85 °C, 85% RH, 100 hours, ≤20%

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Thermal shock: IEC60738-1, +85 °C/ -40 °C, 20 cycles, ≤50%

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Trip cycle life: UL1434, Vmax, I<sub>max</sub>, 100 cycles, no arcing or burning

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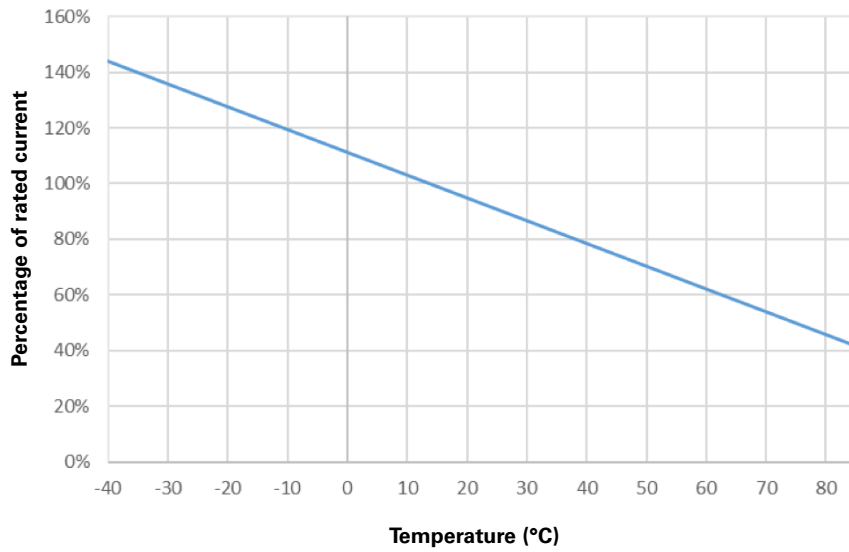
Trip endurance: UL1434, Vmax, I<sub>trip</sub> ≤ I ≤ I<sub>max</sub>, 2 hours, no arcing or burning

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MSL test: J-STD-020, MSL=1, pass and no visible damage

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**Thermal derating curve  
PTS0603**



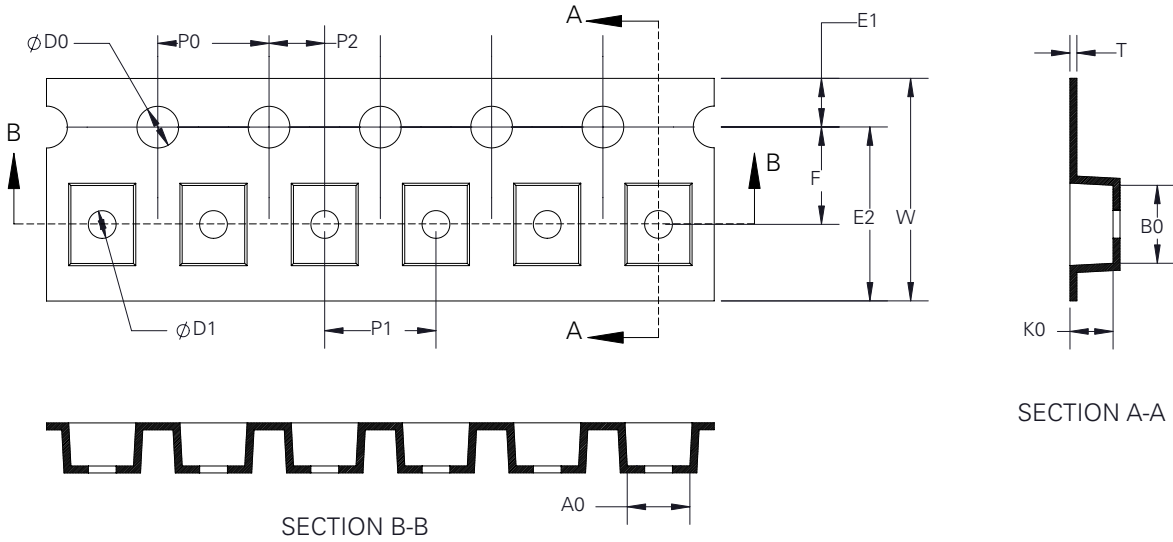
**Packaging information**

PTS0603xxV004-xxV020

Supplied in tape and reel packaging, 5000 parts per 7.0" (178 mm) diameter reel (EIA-481 compliant)

PTS06036V035

Supplied in tape and reel packaging, 5000 parts per 7.0" (178 mm) diameter reel (EIA-481 compliant)



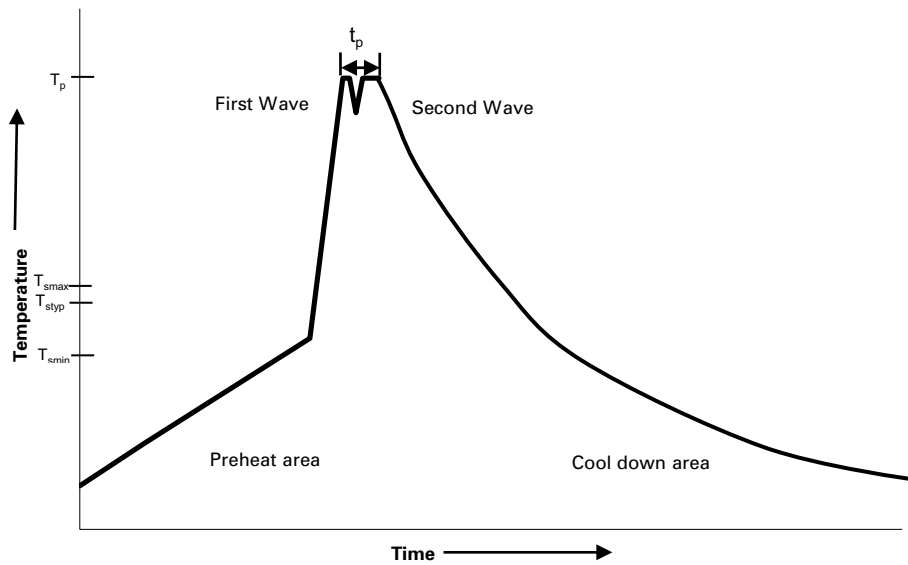
PTS0603xxV004-xxV020

W	F	E1	E2	P0	P1	P2	D0	D1	A0	B0	K0	T
8.00 ± 0.30	3.50 ± 0.10	1.75 ± 0.10	-	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	1.50 + 0.10/-0	-	1.10 ± 0.10	1.85 ± 0.10	0.60 ± 0.10	0.20 ± 0.05

PTS06036V035

W	F	E1	E2	P0	P1	P2	D0	D1	A0	B0	K0	T
8.00 ± 0.30	3.50 ± 0.10	1.75 ± 0.10	-	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	1.50 + 0.10/-0	-	1.10 ± 0.10	1.85 ± 0.10	0.85 ± 0.10	0.20 ± 0.05

**Wave solder profile**



**Reference EN 61760-1:2006**

Profile feature	Standard SnPb solder	Lead (Pb) free solder
Preheat	• Temperature min. ( $T_{smin}$ )	100 °C
	• Temperature typ. ( $T_{styp}$ )	120 °C
	• Temperature max. ( $T_{smax}$ )	130 °C
	• Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	70 seconds
$\Delta$ preheat to max Temperature	150 °C max.	150 °C max.
Peak temperature ( $T_p$ )*	235 °C – 260 °C	250 °C – 260 °C
Time at peak temperature ( $t_p$ )	10 seconds max 5 seconds max each wave	10 seconds max 5 seconds max each wave
Ramp-down rate	~ 2 K/s min ~3.5 K/s typ ~5 K/s max	~ 2 K/s min ~3.5 K/s typ ~5 K/s max
Time 25°C to 25°C	4 minutes	4 minutes

**Manual solder**

+350 °C (4-5 seconds by soldering iron), generally manual/hand soldering is not recommended